

**Symmetry: Art and Science
11th Congress and Exhibition
in Kanazawa, Japan Nov. 25–30,2019**

SYMMETRY: ART AND SCIENCE

**TRADITION AND INNOVATION IN
SYMMETRY – KATACHI**

Kanazawa, Japan
Kanazawa Institute of Technology

Nov.25-30. 2019

ORGANIZATION

The International Society for the Interdisciplinary Study of Symmetry

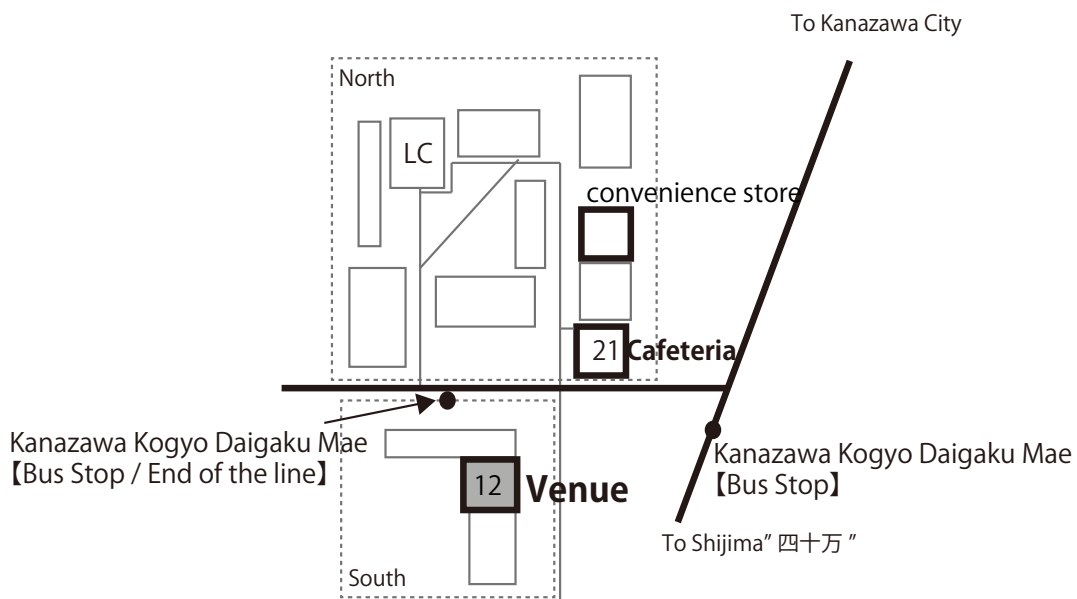
CO-ORGANIZATION
Society for Science on Form

Venue

Kanazawa Institute of Technology, Bldg. #12 (金沢工業大学, 12号館)

Presentation: **Innovation Hall / 4F**

Exhibition, Workshop: **Entrepreneur's Lab. / 1F**



KIT Campus Map

Cafeteria: Bldg. #21 / 1F

Convenience Store: Bldg.#27

Welcome Party: "Il Sole", Bldg. #21 / 2F

Farewell Party: Entrepreneur's Lab.

Schedule

	日程	AM9:00~10:40, 10:55~12:35	PM14:00~15:40, 15:55~17:35
Day1	2019/ 11/25	11:00 Registration Open 11 : 30: meeting point at the West Exit. of Kanazawa Sta.	14:00~ Opening Session (Innovation Hall) Exhibition (Entrepreneur's Lab.) Welcome Party (Bldg.#21, "Il-Sole")
Day2	11/26	Session (Innovation Hall) Exhibition (Entrepreneur's Lab.)	Session (Innovation Hall) Performance Exhibition (Entrepreneur's Lab.) General Assembly (Entrepreneur's Lab.)
Day3	11/27	Session (Innovation Hall) Exhibition (Entrepreneur's Lab.)	12:45~ Excursion (Kanazawa City) Castle of Ishikawa, Kenroku Garden, 21st Art Museum※
Day4	11/28	Session (Innovation Hall) Exhibition (Entrepreneur's Lab.)	Session (Innovation Hall) Exhibition (Entrepreneur's Lab.)
Day5	11/29	Session (Innovation Hall) Exhibition (Entrepreneur's Lab.)	Session (Innovation Hall) Workshop (Entrepreneur's Lab.) Evening Session
Day6	11/30	Session (KIT Innovation Hall) Exhibition (Entrepreneur's Lab.) Closing Session (KIT Innovation Hall)	13:00~ Farewell party (Entrepreneur's Lab.)

- 12:00-14:00 Registration
- 14:00 - 14:25 [OPENING SESSION]
SATOSHI OSAWA / President, Kanazawa Institute of Technology
GÉZA SZŐCS / President, Pen Club in Hungary, Chief Advisor to The Prime Minister,
Hungary
RYUJI TAKAKI
- 14:25 - 15:15 [PLENARY TALK]
Symmetry 30 and “Symm-Fest”: Looking Back and Forth Asymmetrically
DÉNES NAGY
- 15:15 - 15:40 The Lotus and The Swamp: Reconciling Order and Chaos Through a Study in Symmetry
and Asymmetry
LYNN M. F. ARNOLD
- 15:40 – 16:05 Symmetry in Literature and in Logographic Writing Systems
DEZSŐ BENEDEK
- 16:05 –16:20 Coffee Break
- 16:20 - 16:45 Relationship between Pale Color and Structure in Chrysina Beetles
KIYOSHI MIYAMOTO, KENJI NISHIDA, MOTOKI HOSHI, and AKINORI KOSAKU
- 16:45 – 17:10 Bead Chain Building Blocks and Molecular Tension Models
BIH-YAW JIN
- 17:10 – 17:35 Behind the Katachi: Metaphysics and Possible Sources of the Five-Ringed Tower
DUN LIU
- 17:45 - 18:15 [EXHIBITION] : Short Presentations (5min)
- 18:30~ Welcome Party (II-Sole / Bldg.#21)

- 8:35 – 9:00 How Geometry Can Help Better Understanding of Mathematics
SAEED SEYED AGHA BANIHASHEMI
- 9:00 – 9:25 Generating Symmetric Figures Based on Surface Model Using Periodic Functions
KATSUMI MORITA
- 9:25 – 9:50 An Agent-Based Model for Understanding Symmetric Alignment of Honeycomb
TAKAYUKI NARUMI, KENTA UEMICHI, HISAO HONDA and KOICHI OSAKI
- 9:50 – 10:40 [Plenary Talk] : Science of Forms in Japan and Future Prospect
RYUJI TAKAKI
- 10:40 - 10:55 Coffee Break
- 10:55 – 11:20 [Plenary Talk] : A Story on Parabolic Antenna
KORYO MIURA
- 11:20 – 11:45 Orientation of Twist of Biological Planes
HISAO HONDA, HIROAKI HATTA, AKIHIRO YOSHIDA and RYUJI KODAMA
- 11:45-12:10 On the Extension of Temari Basic Divisions: How We Consider It Systematically?
TAKASHI YOSHINO
- 12:10 – 12:35 On the Role of Central Symmetry in the 3D Visualization of the Boolean Algebra B5
KOEN ROELANDT and HANS SMESSAERT
- 12:35 – 14:00 Lunch
- 14:00 – 14:25 Aspects of Symmetries in Architecture: Asymmetrical Romanesque Churches,
Symmetrical Art Nouveau Houses
YUMI KURATANI
- 14:25 – 14:50 House of Symmetries: Wittgenstein's Stonborough Villa
AKIRA KOYAMA
- 14:50 – 15:15 Redundancy for Improving Reliability of Processing Systems: Role of Symmetry
FERENC FRIEDLER and ÁKOS OROSZ
- 15:15 – 15:40 Mirror Worlds: Modelling the Formation and Reformation of Higher Knowledge
H T GORANSON, BETH CARDIER, ASRIEL L T CARDIER, and AVIER J GORANSON CARDIER
- 15:40 - 15:55 Coffee Break
- 15:55-16:20 Symmetry of Opposition
JEAN-YVES BEZIAU
- 16:20 – 16:45 Symmetry and Asymmetry in Japanese Calligraphy (書道)
VALÉRIA INKLER
- 16:45 – 17:10 Path to Metaobjects: on Graphic Records in Morphology
HORACIO WAINHAUS and GUADALUPE NEVES
- 17:10 – 17:35 Music, Architecture & Yoga - Marionette's Description
HIROKI WATANABE
- 17:45-18:15 [EXHIBITION] : Short Presentations (5min)
- 19:00 General Assembly

- 9:00 – 9:25 The Archetypes of D. I. Mendeleev's Periodic Law of Elements
DMITRY WEISE
- 9:25 – 9:50 Climate Homeostasis of Daisyworld and Segregation Patterns
MAYA KAGEYAMA and ATSUSHI YAGI
- 9:50 – 10:15 Unexpected Properties Due to Chirality (Specular Symmetry) in Chemistry
JON M. MATXAIN
- 10:15 - 10:30 Coffee Break
- (10:30~12:10) [Session dedicated to Yasunari Watanabe]
- 10:30 - 10:55 Rolling Experiment on Specimens of Boerdijk-Coxeter Helix
YOSHINORI TESHIMA, SHOTARO NISHIDA, KEITA ITO, YUJI IKEGAMI, TAKESHI FUJIMOTO, and KENJI YAMAZAWA
- 10:55 – 11:20 Design Constraints of Ikegami's 3D Jigsaw Puzzle
YUKI MACHIYA, YUJI IKEGAMI, KENJI YAMAZAWA, and YOSHINORI TESHIMA
- 11:20 – 11:45 Optics of Rainbow Color Mixing Cube: Expand to Artwork
KEIICHI MIYAZAKI
- 11:45-12:10 Reexamination on Homometric Structure: Cyclotomic Sets, Quartet, Tautoeikonic Sets
TAKEO MATSUMOTO
- 12:45 - 17:30 Excursion (Kanazawa City) Castle of Kanazawa, Kenroku Garden, 21st Art Museum

- 9:00 – 9:25 Vibration Shapes of Symmetric Space Frame Domes
KOICHIRO ISHIKAWA
- 9:25 – 9:50 Mathematical Modelling of Bi-Valve Shell
MASAKI TERANISHI, MINORI OGOSHI, KOICHIRO ISHIKAWA, and DOPPO
MATSUBARA
- 9:50 – 10:15 Superimposition of Subsymmetries and Emergent Designs
JIN-HO PARK and YANGSOOK JEON
- 10:15 - 10:40 Rules of Symmetry and Principle of Superposition in Design Processes of Architectonic
Structures
JANUSZ REBIELAK
- 10:40 - 10:55 Coffee Break
- 10:55 – 11:20 Symmetrical Projection Mapping onto Regular Polyhedra
RITSUKO IZUHARA, KENTA NIIZU, and KANON TAKUMI
- 11:20 – 11:35 Generative Asymmetric Projection Mapping Fitting a Three-Dimensional Structure
KAZUTO YOSHIDA and RITSUKO IZUHARA
- 11:35-12:00 Flower: a Flow-Based Programming Environment for Kaleidoscope Patterns
KENTO NAKAMURA and KAZUSHI AHARA
- 12:00 – 12:25 Material Transformation through Morphological Interventions
PATRICIA MUÑOZ
- 12:25-12:50 A Cathedral of Data: Using Assymetry to Annotate Real-World Artefacts in Virtual Reality
BETH CARDIER, JOHN SHULL, NICCOLO CASAS, ALEX NIELSEN, TED GORANSON,
LARRY D. SANFORD, and PATRIC LUNDBERG
- 12:50 – 14:00 Lunch
- (14:00-15:40) [Tessellation Session]
- 14:00 – 14:25 Random Sequential Packings by The Use of Voronoi-Delaunay Tessellation
MASAHARU TANEMURA
- 14:25 – 14:50 Tessellations within Tessellations
VERA VIANA
- 14:50 – 15:15 Convex Pentagon Tilings and Heptiamonds
TERUHISA SUGIMOTO and YOSHIAKI ARAKI
- 15:15 – 15:40 Square Versatile Tessellations
YOSHIAKI ARAKI
- 15:40 - 15:55 Coffee Break

- (15:55~17:35) [Organized Sesion] "Geometry and Islamic Art: The Aleppo Minbar"
Panel 1 The Aleppo Minbar: In its time : Moderator, Carol Bier
- 15:55-16:20 Re/Constructing the Aleppo Minbar: A Flexible Methodology for Generating Islamic Patterns
RIMA AJLOUNI
- 16:20 – 16:35 Historical Origins of The Geometric Designs from the Minbar Commissioned by Nur Ad-Din Al-Zangi for The Aqsa Mosque in Jerusalem
JAY BONNER (to be presented by Carol Bier)
- 16:35 – 17:00 Geometry, Art, and Ideology in 12Th Century Egypt and Syria
BERNARD O’KANE
- 17:00 – 17:25 The Aleppo Minbar: Symmetry and Islamic Aesthetics
CAROL BIER
- 17:25 - 17:35 Discussion
RIMA AJLOUNI and CAROL BIER
- 18:30 - 19:10 [Workshop&Lecture] " New Types of Basic Tensegrity Models: Symmetrical Variations of the Six Part Push Pull "
CASPAR SCHWABE
- 19:10 - 19:50 [Workshop] "Tessellation"
YOSHIAKI ARAKI

- 9:00 – 9:40 [Plenary Talk] Thanks, Dénes - in Gratitude: A Home For a Life's Driven Diversions
WILLIAM S. HUFF
- 9:40 - 10:15 " William S. Huff Lecture "
LYNN M. F. ARNOLD and CASPAR SCHWABE
- 10:15 - 10:40 William Huff's Parquet Deformations: A Viennese Experiment
WERNER VAN HOEYDONCK
- 10:40 - 10:55 Coffee Break
- (10:55~13:00) [Organized Session] "Geometry and Islamic Art:
Panel 2 The Aleppo Minbar: Future Possibilities"
- 10:55 – 11:20 Islamic Geometry in Contemporary Architecture: New Frontiers of Application
RIMA AJLOUNI
- 11:20 – 11:35 Possible Design Methodologies for the Geometric Patterns Used in the Minbar of the
Aqsa Mosque in Jerusalem
JAY BONNER (to be presented by Rima Ajlouni)
- 11:35-11:50 Minbars of Cairo: Craftsmanship and Significance of the Minbar of Sultan Qaytbay
HIND MOSTAFA and ZEIN EL AZZOUNI (to be presented by Carol Bier)
- 11:50 – 12:15 The City Luminous, Part I: Architectural Beauty and The Aesthetics of Diplomacy
NATHANIEL ROBERT WALKER and JESSICA RENEE STREIT
- 12:15-12:40 The City Luminous, Part II: Technology, Tolerance, and an Architecture of Hope
JESSICA RENEE STREIT and NATHANIEL ROBERT WALKER
- 12:40~13:00 Concluding Remarks and Q&A
CAROL BIER and RIMA AJLOUNI
- 13:00 – 14:00 Lunch
- (14:00~15:40) [Organized Session] Origami/ Chair Person: Keimei Kaino
- 14:00 – 14:50 [Special Talk] Rep-Cube and Related Results
RYUHEI UEHARA
- 14:50 – 15:15 Origami Fibonacci Turbine
AKIO HIZUME
- 15:15 – 15:40 Geodesic Folding of Tetrahedron
SERI NISHIMOTO, TAKASHI HORIYAMA, and TOMOHIRO TACHI
- 15:40 - 15:55 Coffee Break
- (15:55~17:10) [Organized Session] Origami/ Chair Person: Tomohiro Tachi

- 15:55-16:20 Designing Folding Motion of Origami Using Quadrilateral Boundary Modules
YUKI MIYAJIMA and TOMOHIRO TACHI
- 16:20 – 16:45 Apple-Peel Foldouts of Four-Dimensional Regular Polytopes: 24, 120 and 600-Cells
KEIMEI KAINO
- 16:45 – 17:10 Enfolding the 5Th Dimension: With Origami to the 3D Representation of the Penrose
Kites & Darts Pattern
RENATE C.-Z.-QUEHENBERGER
- 17:10 – 17:35 Science Origami in the Classroom: Original Origami-Models Made by Students Taking a
Course in Mathematical Science
SHOZO ISHIHARA
- 18:30 - 19:10 [Workshop] "Bead Chain Assembly Puzzles: Bc-Cube and Related Polyhedral
Structures "
BIH-YAW JIN and CHIA-CHIN TSOO
- 19:10 - 20:00 [Evening Session]
MICHAEL BURT with TED GORANSON

Day 6: November 30, Saturday ----- Innovation Hall

- 9:00 – 9:50 [Special Talk] Metric of Wythoffian Polytopes, Measured with Coxeter-Dynkin Diagram
IKURO SATO and JIN AKIYAMA
- 9:50 – 10:15 The (Un)Symmetrical Critique of The Potentiality Actual/Virtual: The Four Functors in
the World
HIROYA SHIMOYAMA
- 10:15 - 10:40 Symmetry: The Lost Ark of the Covenant
MARCIN J. SCHROEDER
- 10:40 - 10:55 Coffee Break
- 10:55 – 11:20 The Dual Functions of Islamic-Iranian Dragon
NIMA ADHAM
- 11:20 – 11:45 Symmetry vs Entropy: Arrow of Time
IMAN BAHRAMALI
- 11:45-12:10 Logical Polygon for Relations Among Propositions about Relations: Symmetry
OXANA CHERKASHINA
- 12:10~12:35 Hands-On Symmetry: Invention, Design and Curation
ATSUHIKO ISHIGURO and CASPAR SCHWABE
- 13:00 Farewell Party

Nov.25, 26 [Exhibition] (5min. Talk)

17:45 - 18:15 Memorial Exhibition for Yasunari Watanabe

YUJI IKEGAMI, TAKASHI SOMA, KENJI YAMAZAWA, and YOSHINORI TESHIMA

Rhombus Tiling in Icositetragon and Twelve-Tone Emperament

KENTA MASUBUCHI, ASAO TOKOLO, and TOMOHIRO TACHI

Folding Five Rhombic Dodecahedra

HIROSHI MUKAI

Dazzling of Object

YOSHIKAWA NOBUO

Origami Fractal

TERUYUKI KANEKO

Polyhedral Compound Hologram

HIROYUKI HONMA, REIJI MICHIKOSHI, and RITSUKO IZUHARA

[Other Exhibitors]

CASPAR SCHWABE

BETH CARDIER, ACE CARDIER, JACK GORANSON CARDIER, AND TED GORANSON

HORACIO WAINHAUS

YOSHINORI TESHIMA and IKEGAMI

SHOZO ISHIHARA

VERA VIANA

TERUHISA SUGIMOTO

DMITRY WEISE

SHOZO ISHIHARA

AKIO HIZUME

HORACIO WAINHAUS

WERNER VAN HOEYDONCK

KEIICHI MIYAZAKI

KEIMEI, KAINO

RYUJI TAKAKI

BIH-YAW JIN

TERUHISA SUGIMOTO

NIIZU KENTA, KANON TAKUMI, and RITSUKO IZUHARA